

Tune-up concepts for discussion 7/13/06

Boiler. Create a schedule to perform maintenance and inspection and conduct such maintenance and inspection, including the following:

- Perform an efficiency test using the test procedures specified in ASME/ANSI Boiler Test Code 4.1.
- Adjust the combustion process of the boiler in accordance with the procedures specified in Chapter 5, Combustion Efficiency Tables, Taplin, Harry, R., Fairmont Press, 1991.
- Measure the concentration of NO_x, CO, and oxygen in the effluent/exhaust stream **before and after** the combustion process of the boiler has been adjusted.
 - All analyzers meeting the specifications set forth in the applicable sections of 40 CFR 60, Appendix B, Performance Specifications 2 through 4; and
 - Portable extractive monitors using an electrochemical sensor performing the gas concentration measurement.
- Measure the opacity of the effluent/exhaust stream **before and after** the combustion process of the boiler has been adjusted.
 - 40 CFR 60, Appendix A-4, Method 9, Visual Determination Of The Opacity Of Emissions From Stationary Sources; or
 - 40 CFR 60, Appendix A-7, Method 22, Visual Determination Of Fugitive Emissions From Material Sources and Smoke Emissions From Flares.
- Determine the hours of operation for the boiler for the previous twelve month period on a monthly basis;
- Annually, before April 1st of each year, inspect and maintain such source in accordance with such schedule;
- Make and keep records of the dates of each inspection and maintenance activity, the operating conditions at the time, and the results of such inspection and maintenance; and
- Notify the Department in writing in the event that the

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boiler fails to comply with the requirements of this subsection.

Gas Turbine Engine. Create a schedule to perform maintenance and inspection and conduct such maintenance and inspection, including the following:

- Inspect the burner, the flame pattern from the burner, and the systems that control the air-to-fuel ratio;
- Adjust the air-to-fuel ratio in accordance with the results of the inspections performed;
- Measure the concentration of NO_x, CO, and oxygen in the effluent/exhaust stream **before and after** the combustion process of the turbine has been adjusted;
- Measure the opacity of the effluent/exhaust stream **before and after** the combustion process of the turbine has been adjusted;
- Re-adjust the air-to-fuel ratio based on results of the previous adjustment performed to minimize total NO_x emissions;
- Confirm that NO_x emissions from the stationary source do not cause an exceedance of the emission limit or any opacity standard;
- Install, operate, and maintain an elapsed time meter for each stationary combustion turbine to indicate, in cumulative hours, the elapsed turbine operating time for the previous twelve months;
- Determine the hours of operation for each stationary combustion turbine for the previous twelve month period on a monthly basis;
- Annually, before April 1st of each year, inspect and maintain such source in accordance with such schedule;
- Make and keep records of the dates of each inspection and maintenance activity, the operating conditions at the time, and the results of such inspection and maintenance; and
- Notify the Department in writing in the event that the turbine fails to comply with the requirements of this

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subsection.

Reciprocating Engine. Create a schedule to perform maintenance and inspection and conduct such maintenance and inspection, including the following:

- set and maintain at all times the ignition and injection timing of the engine four degrees retarded relative to standard timing;
- The CO emission concentration shall not increase beyond 100 ppmvd, corrected to 15% oxygen;
- The turbocharger speed shall not be increased beyond the maximum operating speed recommended by the manufacturer;
- The exhaust port temperature shall not be increased beyond the manufacturer's recommended maximum operating temperature;
- The opacity of the emissions from the engine shall not be equal to or greater than 20% opacity;
- The engine shall be able to start-up fast enough to comply with emergency start-up health care facility requirements, if applicable;
- Inspect and adjust the ignition and injection timing of the reciprocating engine at least once every three years;
- Install, operate, and maintain an elapsed time meter for each reciprocating engine to indicate, in cumulative hours, the elapsed engine operating time for the previous twelve months;
- Determine the hours of operation for each reciprocating engine for the previous twelve month period on a monthly basis;
- Annually, before April 1st of each year, inspect and maintain such source in accordance with such schedule;
- Make and keep records of the dates of each inspection and maintenance activity, the operating conditions at the time, and the results of such inspection and maintenance; and
- Notify the Department in writing in the event that the

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reciprocating engine fails to comply with the requirements
of this subsection.

Reporting exemptions for:

- current annual boiler operator certification; *or*
- installed and operated a continuous emissions monitor.